

Message Text

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ORIGIN EB-08

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USOECN, EXCON, NOCONTRACT

E.O. 11652: XGDS-1

TAGS: ESTC, COCOM, UK, UR

SUBJECT: BRITISH EXPORT OF A GAS LASER SYSTEM TO THE
USSR - IL 1522

REF: A) COCOM DOC (78)65

OBJECT TO THIS EXPORT FOR THE FOLLOWING REASONS:

1. IT IS OUR EVALUATION THAT THE SOVIETS PROBABLY
WANT TO ACQUIRE ONE OF THESE SYSTEMS FOR EXPLOITATION
OF ITS DESIGN FEATURES AS A MEANS OF DEVELOPING SIMILAR
EQUIPMENT OR IMPROVING THE PERFORMANCE AND RELIABILITY
OF THEIR OWN UNITS WHICH ARE OF LESSER QUALITY. IN
ADDITION, WE BELIEVE THAT THE LIKELIHOOD OF DIVERSION
OF THIS EQUIPMENT TO A MILITARY OR MILITARY RELATED

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END-USE IS VERY HIGH. STRATEGIC APPLICATIONS IN THE
AEROSPACE FIELD INCLUDE: CUTTING AND WELDING SUPER
ALLOYS FOR AIRCRAFT ENGINES, HIGH QUALITY PROCESSING
OF TITANIUM FOR AIR FRAMES, AND SELECTIVE HEAT TREAT-
MENT OF SURFACES SUCH AS GAS TURBINE BLADES FOR AIR-
CRAFT ENGINES.

2. THIS SYSTEM IS CURRENTLY CONTROLLED BOTH AS A LASER UNDER IL 1522 (I)(E) AND AS EQUIPMENT CONTAINING A LASER UNDER THE IL 1522 HEADING. IF APPROVED THIS

WOULD BE A PRECEDENT-SETTING CASE, OPENING UP EXPORTS OF ADVANCED PRODUCTION LINE LASER EQUIPMENT TO WARSAW PACT COUNTRIES. A US LASER SYSTEM OF SIMILAR CAPABILITIES HAS BEEN CONSISTENTLY DENIED EXPORT TO THESE COUNTRIES IN OC DOCUMENTS 4966, 5363 AND 5703. THE US ARMY AND AIR FORCE CURRENTLY HAVE A JOINT MANUFACTURING TECHNOLOGY PROJECT WITH SKF TO USE THE UK TYPE OF EQUIPMENT IN SURFACE HEAT TREATING OF TURBINE ENGINE PARTS, HELICOPTER TRANSMISSION PARTS, TANK COMPONENTS, GEARS, AND BEARINGS. THE AIR FORCE PROBLEM WITH BEARINGS FOR TURBINE ENGINES MAY BE SOLVED THROUGH LASER HARDENING, A STATE-OF-THE-ART APPLICATION. THE US ARMY HAS ANOTHER PROJECT FOR LASER WELDING OF MISSILE CONTAINERS AND A - PLANNED PROGRAM TO LASER WELD MOTOR CASES FOR THE PATRIOT SAM. SEVERAL BRANCHES OF THE U.S. DEPT. OF DEFENSE ARE EVALUATING THIS TYPE OF LASER EQUIPMENT FOR HOT MACHINING, WHERE THE LASER HEATS THE WORKPIECE AHEAD OF THE TOOL TO REDUCE METAL REMOVAL ENERGY REQUIREMENTS, INCREASE PRODUCTION RATES, AND INCREASE TOOL LONGEVITY.

2. THIS EQUIPMENT, WHICH IS STATE-OF-THE-ART IN THE WEST, REPRESENTS AN ADVANCED LASER APPLICATION FOR
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PRODUCTION LINE OPERATIONS. OUR EXPERTS REPORTS THAT IT WAS NOT A TRIVIAL MATTER (2 YEARS OR MORE IN THE US) TO CONVERT US LAB LASERS INTO USEFUL PRODUCTION EQUIPMENT BECAUSE OF CONTAMINATION AND RELIABILITY PROBLEMS. NUMEROUS DIFFICULTIES WERE, AND STILL ARE, ENCOUNTERED IN THE DEVELOPMENT AND APPLICATION OF THIS EQUIPMENT TO MILITARILY SENSITIVE AREAS SUCH AS CITED ABOVE.

3. ALTHOUGH SOME SOVIET LITERATURE HAS REPORTED ON THEIR USE OF LASER EQUIPMENT, THERE IS NO HARD DATA ON SOVIETS CAPABILITIES FOR PRODUCTION LINE LASERS. THE USE ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER (FSTC) HAS REPORTED THAT, AS RECENTLY AS 1976, SOVIET LITERATURE FROM THE RESEARCH LAB OF THE ACADEMY OF SCIENCE REVEALED THAT IT WAS EXPERIMENTING WITH A MAXIMUM 1 KW LASER FOR CUTTING. FSTC BELIEVES THAT, IF THIS FACILITY DOES NOT HVE ANYTHING BETTER THAN THAT, IT IS REASONALBE TO ASSUME THAT IT IS NOT BEING USED MUCH, IF AT ALL, IN INDUSTRY. WE REALIZE THAT THE PROPOSED US POSITION ON GAS LASERS FOR THE UPCOMING LIST REVIEW WOULD DECONTROL THE LASER INVOLVED, BUT ONLY IF IT WERE STANDING ALONE. THE EQUIPMENT IN WHICH THE LASER IS

EMBEDDED, AND THE SYSTEM RESULTING FROM THE COMBINATION
ARE CONSIDERED BY THIS GOVERNMENT TO BE OF VERY HIGH
STRATEGIC VALUE AND CONTINUE TO BE STRICTLY EMBARGOED. CHRISTOPHER

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